

dents: to open the doors of the medical schools without charge to all that have received the necessary preliminary education, to insist upon a longer period of study, and to make the examinations more strict." The spirit of these recommendations must be approved by every lover of sound medical learning; and all would rejoice to witness its legal application in that great State which has been the first successfully to engage the medical profession of the United States in the cause of educational improvement.

A. S.

ART. XV.—*Manual of Physiology.* By WILLIAM SENHOUSE KIRKES, M.D., assisted by JAMES PAGET, Lecturer on General Anatomy and Physiology at St. Bartholomew's Hospital. With one hundred and eighteen illustrations on wood. Philadelphia, Lea & Blanchard, 1849. 12mo. pp. 552.

THIS is, certainly, a most able manual of physiology. The student will find in it, not a meagre outline, a bare skeleton of the leading particulars embraced in the science, but a very complete and accurate—though, at the same time, concise—account of the facts and generally admitted principles of physiology; forming an admirable introduction to the study of that science, as well as a useful compendium for consultation by those who are preparing for an examination.

The work was originally commenced with the intention of making it simply a digest of Müller's elements—and several of the chapters are of this character. In other portions of the work, the original design has not been followed out. In regard to the subjects embraced in these, "it was found that the progress of physiology, during seven years, had so increased or modified the facts, and some even of the principles of the science, that Müller's Elements, and the notes by Dr. Baly, could only be employed as among the best authorities and examples."

While all discussions of unsettled questions and expressions of personal opinion are necessarily omitted, ample references are given, not only to works in which these may be consulted, but to those, also, by the aid of which the study of physiology, in its widest extent, may be pursued.

The English edition bears the title of "Hand Book." This the American publisher has altered to "Manual"—"as being more appropriate to the character of the work." In what this greater appropriateness consists, we are at a loss to imagine: we had always supposed that the Saxon *hand-buch* and the Latin *Manuale*, both meant one and the same thing.

The illustrations which are from steel plates in the original edition, are in the present from wood engravings, and being placed upon the same page with the text, are much more convenient for reference. Occasionally a different representation of the same object has been substituted, where such alteration appeared advantageous.

The whole of the illustrations are very excellent, and calculated to render the description of the objects they represent clear and precise.

To those who stand in need of a Manual of Physiology—and works of this description have now become, in a certain sense, indispensable portions of the apparatus of study—we can very confidently recommend the present one as well for its comprehensiveness as for its general accuracy.

D. F. C.

ART. XVI.—*An Introduction to Practical Chemistry, including Analysis.* By JOHN E. BOWMAN. Philadelphia: Lea and Blanchard, 1849. 12mo. pp. 303.

THE above is the title of a republication, the special object of which is to explain, and render familiar to the beginner, the various processes employed in analysis, and for the illustration of chemical science. Although intended as a text-book for the author's class, it deserves a wider circulation, from the clear and concise mode of explanation of the processes, and the simplicity of the manipulations, placing the acquisition of the science by actual practice within

reach of all whose inclinations may tend in this direction. In the introduction, is inculcated the indispensable necessity of method and care in manipulation, and, an account of the symbols used to express composition. In regard to symbols, a novelty is introduced by which the reader is informed by the kind of letters employed, what is the state of aggregation of the substance expressed. Thus hydrogen, a gas, is represented by a thin type (H), bromine, a liquid, by the italic (*Br.*), carbon, a solid, by the Roman letter (C); the same construction being also applied to compounds, and the condition in which they may be used, or the forms assumed as the result of decomposition. The work is divided into five parts; the first containing the operations and exercises necessary in the production of gases and liquids, glass working, blowpipe operations, specific gravity, &c.; the second, the action of reagents, the substances being arranged in classes, according to their modes of reaction; the third, the qualitative analysis of substances of unknown composition, whether simple or mixed salts, soluble in water, acids, or insoluble in ether; the fourth, quantitative analysis; and the fifth, examination of calculi, and notices of reagents, together with their impurities and modes of detection, concluded by an appendix containing a series of tables of value as references, and important in the economy of time.

R. B.

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ART. XVII.—*Chemical and Pharmaceutical Manipulations.* By CAMPBELL MORFITT, assisted by ALEXANDER MUCKLE. Philadelphia: Lindsay and Blakiston, 1849. 12mo. pp. 482.

THIS work is intended to facilitate the practical acquisition of chemical knowledge, and to lighten the labours of the operator, by a complete description of the most approved apparatus and processes, and by instructions in manipulation, together with the precautions in the management necessary to insure accuracy. This object has been accomplished in a manner creditable to the authors, as expert and careful analysts, and exhibits throughout a familiarity with the minutiae of detail, and the necessity in all cases, of acquiring the habits of strict attention to care and order in these, as can only be acquired by constant operation in the laboratory itself. The work affords all the information requisite for fitting up a laboratory adapted for examination, experiment, and investigation, and in which the most modern improvements may be found. Commencing with the laboratory itself, there are full descriptions of the separate apartments necessary, the apparatus and uses to which each are destined, the best modes of lighting, and the arrangement of their furniture most suitable to prevent delay and inconvenience to the operator. This is the first, and certainly a very important subject, upon which depends the future comfort, not to say success, of the occupant, and by the adoption of correct ideas on this point, such as are here laid down, the arrangement may be modified to suit the necessities or convenience of all. The notices and descriptions of apparatus are extensive, comprising the indispensable, and occasionally useful, the most familiar, and the more rare, the economical and costly, which, together with the mode of manipulating, are copiously illustrated by drawings, by which they are rendered perfectly intelligible, even to an unpractised beginner. The information on these points is of such extent, that disappointment would rarely meet one who should consult the work in relation to anything connected with these subjects, and the knowledge obtained be applied practically, as far as this can be effected, without the actual performance of the operations themselves.

R. B.